

Notic of Allowability

Application No.

09/841,727

Examiner

Davienne Monbleau

Applicant(s)

CHICKLIS ET AL.

Art Unit

2878

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the After-Final response filed on 5/13/04.
2. ☒ The allowed claim(s) is/are 1-3, 5, 6, 18 and 20-22.
3. ☒ The drawings filed on 13 May 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT AND STATEMENT OF REASONS FOR ALLOWANCE

Drawings

The drawings were received on 5/13/04. These drawings are accepted.

Response to Arguments

Applicant's arguments filed 5/13/04 on pages 7-9 have been fully considered and are persuasive in light of the Examiner's Amendment included herein. Accordingly, the rejection of Claims 1-3, 5, 6, 18, and 20-23 have been withdrawn.

In particular, the Applicant argues that the cited prior art of record (*Stultz*) does not teach a resonant pumped laser. The Applicant further argues that the phrase "resonant pumping" has the definition of "direct excitation of the upper laser state. Although the Examiner does not agree with this definition, Examiner does agree that the claim limitation "unsensitized erbium" indicates the direct excitation of the upper laser state. *Stultz* does not teach this limitation.

Esterowitz et al. (US 5,200,966), which was cited as relevant art, does teach a resonant pumped erbium laser comprising unsensitized erbium, wherein the upper laser state is directly excited. However, regarding Claim 1, *Esterowitz* does not teach the claim limitations of "dilute concentrations", a "storage lifetime of at least 4msec", and an "energy/pulse between approximately 250mJ and approximately 300mJ. Regarding Claim 18, *Esterowitz* does not teach the claim limitation of "dilute concentrations" and that a "first excited state of the erbium is pumped at approximately 1.5 microns".

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

Art Unit: 2878

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Paul Remus on 5/27/2004.

The application has been amended as follows:

Claim 1 line 1: change "eyesafe, Q-switched, laser" to -- eye-safe, Q-switched laser --

Claim 1 line 3: insert -- dilute concentrations of unsensitized Erbium and -- after "erbium laser having".

Claim 1 line 3: replace "4msec" with -- 4msec, --

Claim 2: replace entire claim with the following ...

The system in accordance with claim 1, wherein the unsensitized concentration of Erbium is between about 1% and about 2% of active ion, said Erbium having the storage lifetime of approximately 10msec for a 1.5 micron transition.

Claim 3 line 1: change "claim 2 further" to -- claim 2, further --

Claim 6 line 1: change "claim 1 wherein" to -- claim 1, wherein --

Claim 18: replace entire claim with the following ...

A high-energy, eye-safe, Q-switched laser comprising:

a resonant pumped erbium laser with dilute concentrations of unsensitized Erbium, wherein the unsensitized Erbium concentration is between about 1% and about 2% to provide a greater amount of energy to be stored; and

a first excited state of the Erbium that is pumped at approximately 1.5 microns.

Art Unit: 2878

Claim 20 line 1: change "claim 18 further" to -- claim 18, further -- .

Claim 21 line 1: change "claim 18 further" to -- claim 18, further -- .

Claim 22 line 1: change "claim 18 further" to -- claim 18, further -- .

Claim 23: CANCEL

Allowable Subject Matter

Claims 1-3, 5, 6, 18 and 20-22 are allowed.

The following is an examiner's statement of reasons for allowance: the cited prior art of record does not teach or fairly suggest an eye-safe, Q-switched laser comprising, along with the other claimed features, a resonant pumped erbium laser having dilute concentrations of unsensitized Erbium.

The advantages of this feature are in the specification on pages 1-5. In particular, this feature increase the amount of energy that may be stored in the upper laser level because upconversion is inherently a weak process in unsensitized, low-concentration Erbium crystals. This eliminates the extra energy transfer process required during upconversion (see Applicant's response page 8).

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2878


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davienne Monbleau whose telephone number is 571-272-1945. The examiner can normally be reached on Mon-Fri 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Davienne Monbleau

DNM


DAVID PORTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800